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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/008,800

11/08/2001

Mark A. Gerber

SC11588TK

7112

23125

7590

11/18/2004

FREESCALE SEMICONDUCTOR, INC.
LAW DEPARTMENT
7700 WEST PARMER LANE MD:TX32/PL02
AUSTIN, TX 78729

EXAMINER

ROMAN, ANGEL

ART UNIT

PAPER NUMBER

2812

DATE MAILED: 11/18/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/008,800

Applicant(s)

GERBER ET AL.

Examiner

Angel Roman

Art Unit

2812

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 September 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 3-15,28-38,40,42,43 and 46-50 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 3-15,28,29,43 and 46-50 is/are allowed.
- 6) ☒ Claim(s) 30-37,40 and 42 is/are rejected.
- 7) ☒ Claim(s) 38 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04 August 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. The indicated allowability of claims 41 and 42 is withdrawn in view of the newly discovered reference(s) to Shin et al.. Rejections based on the newly cited reference(s) follow.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 30, 31, 33-37, 40 and 42 are rejected under 35 U.S.C. 102(e) as being anticipated by Shin et al. U.S. Patent 6,798,049.

Shin et al. discloses providing a package substrate 10 having a first surface along a first plane and second surface along a second plane, wherein the package substrate 10 has a cavity between the first plane and the second plane (see figure 4A); placing a first integrated circuit 1 in the cavity; placing a second integrated circuit 2 adjacent to the first integrated circuit 1 outside the cavity, such that a supporting member 34 (die attach material) is interposed between the first integrated circuit 1 and the second integrated circuit 2; and depositing encapsulating material (31, 32) over the

first integrated circuit 1 and the second integrated circuit 2, wherein the package substrate 10 is not formed from encapsulating material, and wherein the step of depositing comprises; depositing a first portion of the encapsulating material 31 over the first integrated circuit 1 prior to the step of placing the second integrated circuit 2 (see figure 4C), and depositing a second portion of the encapsulating material 32 over the second integrated circuit 2, wherein the method further comprises placing a third integrated circuit 3 overlying the second integrated circuit 2 prior to the step of depositing the second portion of encapsulating material 32 and wherein the encapsulating material does not overly at least one pad 13 and the encapsulating process comprises a transfer molding process (see figures 4D and 4E). Shin et al. also discloses a step of removing a tape-supporting member 18 prior to placing a second integrated circuit 2 (see figures 4A-4C); electrically connecting the first integrated circuit to first pads on a first surface and electrically connecting the second integrated circuit to second pads on a second surface using wire bonding (See figures 4B and 4D).

Claim Rejections - 35 USC § 103

4. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
5. Claim 32 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shin et al. U.S. Patent 6,798,049.

Shin et al. is applied as above but lacks anticipation on using an electrically conductive supporting member, selecting an electrically conductive material for the supporting member is only considered to be routine optimization of the method disclosed in Shin et al. since shin et al. already suggest using an epoxy as a supporting member an conductive epoxy are widely used in the art in order to improve heat dissipation therefore it would have been obvious to a person having ordinary skills in the art at the time the invention was made to use a conductive epoxy as the epoxy supporting member in the primary reference of Shin et al..

Allowable Subject Matter

6. Claims 3-15, 28, 29, 43 and 46-50 are allowed.
7. Claim 38 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

8. Applicant's arguments with respect to claims 3-15, 28-38, 40, 42, 43 and 46-50 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

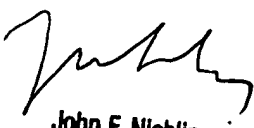
9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Panchou et al. discloses a method of forming a package device having stacked semiconductor devices.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Angel Roman whose telephone number is (571) 272-1681. The examiner can normally be reached on Monday-Friday 8:00am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Niebling can be reached on (571) 272-1679. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

AR
November 15, 2004


John F. Niebling
Supervisory Patent Examiner
Technology Center 2800